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NOTE BY THE SECRETARY-GENERAL

1. The Secretary-General has the honour to transmit to the Security Council a report submitted by the Executive Chairman of the Special Commission established by the Secretary-General pursuant to paragraph 9 (b) (i) of Security Council resolution 687 (1991).
2. The present report is the eighth submitted under paragraph 8 of Security Council resolution 715 (1991) of 11 October 1991, by which the Council requested the Secretary-General to submit a report to the Security Council every six months on the implementation of the Special Commission's plan for ongoing monitoring and verification of Iraq's compliance with the relevant parts of section C of Security Council resolution 687 (1991). It updates the information contained in the first seven reports (S/23801, S/24661, S/25620, S/26684, S/1994/489, S/1994/1138 and Corr.1 and S/1995/284).
3. Further information concerning developments since the last report submitted under resolution 715 (1991) is contained in the report to the Security Council of 20 June 1995 (S/1995/494), the ninth report provided in accordance with paragraph 3 of resolution 699 (1991).



Annex

Report of the Secretary-General on the status of the implementation
of the Special Commission's plan for the ongoing monitoring and
verification of Iraq's compliance with relevant parts of section C
of Security Council resolution 687 (1991)

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I. INTRODUCTION

1. The six months which have elapsed since the last report submitted to the Security Council under paragraph 8 of resolution 715 (1991) have been among the most eventful in the history of the Special Commission, both in respect of relations with the Government of Iraq and of the progress made in obtaining information regarding Iraq's programmes for production of weapons of mass destruction and missiles with a range greater than 150 kilometres. While the present report is submitted pursuant to resolution relating to ongoing monitoring and verification, the Commission has repeatedly pointed out that a full understanding of all aspects of Iraq's programmes for weapons of mass destruction is essential to the planning and the operation of an effective system of monitoring to ensure Iraq's compliance with its undertaking not to use, develop, construct or acquire any of the items proscribed to it under paragraphs 8 and 9 of resolution 687 (1991), namely "(a) all chemical and biological weapons and all stocks of agents and all related subsystems and components and all research, development, support and manufacturing facilities related thereto; (b) all ballistic missiles with a range greater than 150 kilometres, and related major parts and repair and production facilities".

2. While describing the developments which have taken place in the conduct and strengthening of monitoring operations since April 1995, the present report contains a detailed account of the new information obtained regarding Iraq's prohibited programmes and its probable impact on the monitoring system. In the period under review, Iraq has taken important decisions to acknowledge its offensive biological weapons programme and documents are being obtained in all areas. However, much of the new information contradicts earlier declarations by Iraq and some assessments made by the Commission now must be revised. A more enduring and coherent explanation of past activities must be provided by Iraq in the new full, final and complete disclosures which it is to submit in all areas, as described more fully elsewhere in this report.

3. The Commission's report in April 1995 (S/1995/284) contained, in its paragraphs 3 and 4, a comprehensive description of the concept of operations underlying the Commission's monitoring system. It is worth while, in the light of developments in the last six months, to recall the sections in that description which explain the importance of a full knowledge of Iraq's prohibited programmes for the monitoring system and for confidence in its effectiveness and comprehensiveness. These require:

"Possession by the Commission of a full picture of Iraq's past programmes and a full accounting of the facilities, equipment, items and materials associated with those past programmes, in conjunction with full knowledge of the disposition of dual-purpose items currently available to Iraq, the technologies acquired by Iraq in pursuing the past programmes, and the supplier networks it established to acquire those elements of the programmes that it could not acquire indigenously. This information provides the baseline data from which ongoing monitoring and verification proceeds;

"Knowledge of the level of technology attained by Iraq, of the production and acquisition methods it used and of the materials and equipment it had available are all key to designing a system of monitoring that addresses issues of concern and focuses monitoring effort where it would be most effective and efficient. For example, within Iraq, the system should focus more of its efforts on those technologies and production methods that Iraq is known to have mastered than on technologies and methods that Iraq is known not to have mastered, whereas, for the export/import monitoring regime, the converse would be true, with effort focusing on those items that Iraq would have to import in order to reactivate a proscribed weapons programme. Clearly, knowing where to focus effort requires knowledge of what Iraq would have achieved in its past programmes;

"Similarly, knowledge of the procurement methods and routes used by Iraq for its past programmes is key to the design of an effective and efficient export/import monitoring regime. This system should be designed to be effective against the procurement routes and methods that Iraq is known to have used in the past. Testing whether it is, is predicated on knowing those routes and methods;

"Full accounting for the materials, items and equipment associated with the past programmes is directly related to what assets should be monitored under the system. Dual-purpose materials, items and equipment from the past programmes must be monitored, along with other dual-purpose capabilities available to Iraq. Uncertainties relating to the accuracy or completeness of this accounting will consequently lead to uncertainties as to whether the ongoing monitoring and verification system is indeed monitoring all the materials, items and equipment which should be monitored". (ibid., para. 3 (a))

4. Under Security Council resolutions 687, 707 and 715 (1991), Iraq is obliged to provide the above information, which the Commission then verifies through its inspection, monitoring and analysis activities. Iraq is required to update its declarations on its dual-purpose activities and capabilities every six months.

5. The description in the present report of the new information received from Iraq in the period under review is intended to assist in assessing the extent to which such information, together with that previously obtained, contributes to meeting the criteria set out above. This, in turn, will bear upon the assessment of the effectiveness and comprehensiveness of the monitoring system and the extent to which it may have to be further modified and augmented to take account of recent developments. Because of the challenges to the monitoring system implied in the new revelations, this report contains, under each separate weapons heading, a detailed description of the operations of the newly designed monitoring system.

6. The present report, after summarizing relations with Iraq in the period under review, contains chapters on the various areas of responsibility of the Special Commission, namely those relating to missiles with a range greater than 150 kilometres and to chemical and biological weapons. Further chapters cover the Commission's support and other responsibilities in the nuclear area; other activities, such as those in relation to the export/import mechanism; and

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finance, organization and air support. The final chapter contains the conclusion of the Commission on the developments which have occurred in the last six months.

II. RELATIONS WITH IRAQ: DEVELOPMENTS: VISITS BY THE EXECUTIVE CHAIRMAN TO IRAQ

A. Summary of the Executive Chairman's visits

7. During the period under review, the Executive Chairman has paid five visits to Baghdad to maintain contact with the most senior levels of the Iraqi Government and to seek to expedite the work of the Commission, particularly in relation to Iraq's prohibited programmes, by pressing the Government to follow a policy of complete and frank disclosure. This was specially important in respect of Iraq's biological weapons programme, which the Commission's experts had determined to be of very significant proportions, despite Iraq's constant denials that it had done anything more than limited research.

8. The Executive Chairman's visits took place as follows: 29 May to 1 June, 30 June to 2 July, 4 to 6 August, 17 to 20 August and 29 September to 1 October 1995. Two visits were also paid to Baghdad by the Deputy Executive Chairman, from 14 to 17 May and 17 to 20 September 1995, to address issues relating to Iraq's prohibited programmes. Information on those visits, from April to 1 June 1995, will be found in the Commission's June 1995 report (S/1995/494, paras. 4-10).

B. Cooperation, ultimatum and disclosures

9. The visits listed above illustrate the rocky road of cooperation between Iraq and the Commission in the period under review, where indications that Iraq was contemplating ceasing such cooperation culminated in an ultimatum, early in August 1995, that such cooperation would cease if, by 31 August 1995, no progress was made in the Security Council in the direction of easing or lifting the sanctions and the oil embargo. However, the ultimatum was withdrawn following the departure of General Hussein Kamel Hassan from Baghdad and his receipt of asylum in Jordan. The General had, among a large number of important responsibilities, been in charge, over considerable periods of time, of Iraq's programmes in the areas now proscribed to it. Since his departure, the Deputy Prime Minister, Mr. Tariq Aziz, has stated that Iraq has adopted a new policy of complete cooperation and transparency with the Commission and the International Atomic Energy Agency (IAEA), without any time-limit.

10. In the first of the Executive Chairman's visits, at the end of May 1995, the Deputy Prime Minister of Iraq sounded a warning that, if no prospect appeared for reintegrating Iraq into the international community through the easing or lifting of sanctions and the oil embargo, it would be difficult for Iraq to justify the expense and the effort involved in cooperation with the Commission and IAEA. Iraq required statements from the Commission that the chemical weapons and missile files were closed and the monitoring system was operational, and from IAEA that the nuclear file was closed. If Iraq received

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such assurances and thus judged the prospects for reintegration to be positive, it would, in late June, address the one outstanding issue of significance, the biological issue. In response, and subsequently in his June 1995 report to the Security Council (S/1995/494), the Chairman stated that the bulk of what was required to implement paragraphs 8 to 10 of Security Council resolution 687 (1991) with regard to chemical weapons and missiles had been achieved. However, in view of Iraq's late and incomplete declarations, a longer period had been needed to identify all aspects of Iraq's programmes than might otherwise have been required. Furthermore, the major area of Iraq's biological weapons programme remained non-disclosed. Monitoring was operational in all areas. Those uncertainties which remained in the missile and chemical areas needed to be resolved and in order to do so the Commission would continue to use its rights under the relevant Security Council resolutions and the exchange of letters of 7 and 14 May 1991 on the facilities, privileges and immunities of the Commission in Iraq.

11. Upon the Executive Chairman's arrival in Baghdad on 30 June 1995, Deputy Prime Minister Tariq Aziz said that his Government had reviewed carefully the Commission's report of June 1995. While it had found the report to contain both negative and positive elements, it had concluded that the positive elements were such that Iraq would now address the issue of its biological weapons programme. The following day, on 1 July 1995, Iraq made a brief oral presentation in the course of which it acknowledged an offensive biological weapons programme, including the production of a number of biological agents, but denied the weaponization of such agents. The Chairman welcomed this disclosure but expressed the view that it needed to be augmented, particularly as regards weaponization, and had to be presented to the Commission in the form of a full, final and complete disclosure as required by Security Council resolution 707 (1991). A fuller account of this and subsequent disclosures relating to Iraq's biological weapons programme will be found in chapter V of the present report.

12. Iraq's decision to disclose its offensive biological weapons programme appeared to indicate that it was moving away from its warning of non-cooperation, expressed by Mr. Tariq Aziz during the Executive Chairman's preceding visit to Baghdad. However, this situation was abruptly reversed in the course of July 1995. On 17 July, President Saddam Hussein made a speech in Baghdad in which he indicated that his Government would cease cooperation with the Security Council if there were no progress in the Council towards the lifting of sanctions and the oil embargo. No deadline was given by the President for such progress. However, a few days later, in Cairo, the Foreign Minister of Iraq, Mr. Mohammed Saeed Al-Sahaf, made a speech in which he stated that 31 August 1995 was the deadline.

13. The Executive Chairman arrived in Baghdad for the third of his visits in the period under review on 4 August 1995. Iraq delivered to him what it stated to be its full, final and complete disclosure of its biological weapons programme, still denying that any of the agents produced had been weaponized. In a meeting with the Deputy Prime Minister, Mr. Tariq Aziz, on 5 August, the latter stressed to the Chairman that Iraq would cease cooperation with the Security Council and the Commission if there were no progress, by 31 August 1995, towards lifting sanctions and the oil embargo. The Deputy Prime

Minister asked the Chairman to convey this information to the Security Council upon his return to United Nations Headquarters. The Chairman reached New York on 7 August, and immediately thereafter received a message from Mr. Tariq Aziz, through the Permanent Representative of Iraq to the United Nations, that the deadline was serious and that the Chairman should inform the Council accordingly. The Chairman did so, in an oral briefing to the Council on 10 August.

14. Three days previously, on 7 August 1995, General Hussein Kamel Hassan had left Baghdad, arriving in Amman the following day. On 13 August, the Executive Chairman received a letter from General Amer Rashid al-Ubeidi, Minister of Oil and former Director of the Military Industrialization Corporation (MIC), inviting him to return to Baghdad. In the letter, it was stated that the Government had ascertained that General Hussein Kamel Hassan had been responsible for hiding important information on Iraq's prohibited programmes from the Commission and IAEA by ordering the Iraqi technical personnel not to disclose such information and also not to inform Mr. Tariq Aziz or General Amer of these instructions. An identical letter was addressed to the Director General of IAEA. In a message to the Chairman on 14 August, Mr. Tariq Aziz stated that the deadline was no longer in effect.

15. The Executive Chairman and the Leader of the IAEA Action Team, in response to the invitations from Iraq, arrived in Baghdad on 17 August 1995. On the evening of that day, a plenary meeting was held with an Iraqi delegation led by the Deputy Prime Minister, and including the Foreign Minister, Mr. Al-Sahaf, the Minister of Oil, General Amer, the Under-Secretary of the Foreign Ministry, Dr. Riyadh Al-Qaysi, and other senior officials. Mr. Tariq Aziz made an initial statement in the course of which he repeated that General Hussein Kamel Hassan had, unbeknown to the senior levels of the Iraqi leadership, hidden information on the prohibited programmes which Iraq would now disclose to the Commission and IAEA. Iraq had decided on a policy of cooperation and full transparency with the Commission and IAEA, without imposing any time-limit, and also of cooperation and good-neighbourliness with the States of the region and elsewhere and of economic development in Iraq itself. Following on the plenary meeting, in a meeting devoted to Iraq's biological weapons programme, Iraq for the first time disclosed a much more extensive programme than that contained in its full, final and complete disclosure of early August 1995, admitting weaponization immediately prior to the outbreak of the Gulf war, including the filling of biological warfare agents into 166 bombs and 25 Al Hussein missile warheads.

16. In the course of the following two days, Iraq made further disclosures in regard to other prohibited programmes, including indigenous production of Scud-type missile engines, assembled from both imported and locally produced parts, and the testing of such engines. The significance of this, and its consequences for Iraq's previous statements regarding unilateral destruction of proscribed materials, is discussed in paragraphs 21, 22 and 44 below.

17. On 20 August 1995, at the conclusion of the Executive Chairman's visit, a considerable cache of documents and other materials was located and taken possession of by the Commission, as described in paragraphs 24 to 27 below.

18. The Executive Chairman returned to New York through Jordan, thus affording the opportunity to meet General Hussein Kamel Hassan and to discuss with him Iraq's programmes in the proscribed fields. Useful information was obtained.

19. Both during and after the Executive Chairman's mid-August visit to Baghdad, expert teams in all areas of the Special Commission's responsibility held discussions with their Iraqi counterparts. The missile and biological teams obtained much valuable information, indicating programmes larger or more advanced in every dimension than previously declared. In the chemical field, after being confronted with evidence found by the chemical team in the new documentation, Iraq acknowledged a much larger and more advanced programme than hitherto admitted for the production and storage of the chemical warfare agent VX. In this regard, the Deputy Executive Chairman visited Baghdad from 17 to 20 September 1995, in the course of which he pointed out to Iraqi officials, at senior levels, the gravity of the clear deception of Iraq in its spring 1995 declarations to the Commission concerning the VX nerve agent in particular. This had been reported to the Security Council in June 1995 and the intentional deception would have to be underscored in the current report.

20. On 29 September 1995, the Executive Chairman arrived in Baghdad, for his last visit in the period under review, to assess with the Iraqi authorities the situation resulting from the recent disclosures, following on the departure of General Hussein Kamel Hassan. The Chairman expressed the view, in the various meetings which he held, that it was in Iraq's best interests to provide everything now, rather than to drag out the uncovering of information which would have an increasingly negative impact. Iraq undertook to do its best, and the Deputy Prime Minister, Mr. Tariq Aziz, pledged his Government's cooperation and full openness with regard to the implementation of Security Council resolution 687 (1991).

C. Some consequences of recent disclosures

1. Unilateral destruction by Iraq

21. Iraq's decision in 1991 to undertake, in violation of Security Council resolution 687 (1991), the unilateral destruction of various elements of its prohibited programmes has had the most severe consequences in delaying, and in rendering much more complicated, any determination by the Commission that it has a complete picture of those programmes and has accounted for all the significant components thereof. This destruction has been stated by Iraq to cover all three areas of proscribed missiles and chemical and biological programmes. Unilateral destruction of weapons, equipment and materials, including agent and precursors, has made verification, particularly of the quantities involved, extremely difficult. The Commission has thus pressed for any documentation Iraq may have relating to such destruction, including the orders to carry it out and field reports on how those orders were executed.

22. The picture is further complicated by certain recent disclosures which show that Iraq has used alleged unilateral destruction to cover up elements of its prohibited programmes which it wished to keep concealed. Possibly the most important example of this, uncovered to date, relates to the missile field.

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Iraq declared in 1992 that it had unilaterally destroyed 89 Scud/Al Hussein missiles. Recent analysis by the Commission's experts, and admissions by Iraq, now reveal that only 83 missiles were so destroyed in 1991. The figure was inflated by Iraq to 89, in order to conceal its indigenous production of engines for Scud-type missiles, as reported in paragraphs 43 and 44 of the present report. This example will require the Commission to take a new look at all Iraq's declarations on unilateral destruction and for it to press for documentation and any other means of verification of such declarations.

2. Documentation

23. The Commission has, on every available occasion, stressed to Iraq that the handing over of documentation relating to its prohibited programmes is the best and quickest means for the Commission to verify Iraq's declarations relating to the programmes. Iraq, however, has sought to maintain that, some time in 1991, it issued an order to destroy all documentation on those programmes. The Commission's attempts to obtain evidence of such an order, and to ascertain precisely when it was issued, have been unsuccessful. The Commission has remained sceptical that any such wholesale destruction ever took place. It has so told Iraq on numerous occasions. It was not conceivable that all evidence would be destroyed of major and very costly scientific research and engineering undertakings, representing billions of dollars in investment and countless man-hours of work.

24. On 20 August 1995, at the conclusion of the Executive Chairman's visit to Baghdad (17-20 August), the Chairman, in a public statement, complained that, while very significant new information had been provided, not a single document, which could help in verifying that information, had been handed over. Shortly after that statement was made, and while the Chairman's team was preparing for departure to the Habbaniyah airfield, General Amer Rashid al-Ubeidi contacted the Chairman and requested that, on his way to the airfield, he visit a farm which the General stated to have belonged to General Hussein Kamel Hassan, where items of great interest to the Commission could be found. On arrival at the farm, in addition to a number of shipping containers with miscellaneous equipment in them, the Chairman and his team found, in a locked chicken house, numerous metal and wooden boxes which were packed with documentation, together with microfiches, computer diskettes, videotapes, photographs and prohibited hardware components. Orders were immediately issued to the Commission's personnel, who had been brought to the site, to secure this material and transfer it to the Baghdad Monitoring and Verification Centre.

25. Examination of the contents of the boxes at the Centre revealed well over half a million pages of documentation. While most of this related to the nuclear area, a large amount concerned the chemical, biological and missile areas. This documentation has now been inventoried and is being arranged, after scanning, on a priority basis for examination. The initial assessment of the Commission is that the bulk of the material in the missile, chemical and biological fields comes from a number of the sites where Iraq's proscribed programmes had been carried out. The amount of material varies from area to area, being more comprehensive in certain areas than in others. However, documentation from the Headquarters of the Military Industrialization

Corporation (MIC) is not included, nor are the relevant archives of the Ministry of Defence. From recent statements made by senior Iraqi officials, the Ministry's records are still intact and detailed.

26. Since the discovery of the documents, Iraq has admitted to the Commission's personnel that, in the summer of 1991, orders were issued by a "high authority" to the directors of the sites involved in Iraq's proscribed programmes to protect "important documents" - which was understood to relate to the technology of production - by packing them, in a very brief period of time, and delivering them on demand to representatives from the special security organizations. This delivery is said to have taken place without written orders or the provision of receipts by the representatives of those organizations when they collected the packed documents. Iraq's original claim that all documentation was destroyed is thus patently false.

27. The Commission doubts that the materials obtained are all those which were gathered under the protection order issued in 1991. More such documentation must still exist, particularly in certain significant areas such as production records, Iraq's procurement networks and sources of supply. Also, the relevant MIC headquarters documentation and archives of the Ministry of Defence are missing. These are materials which must be handed over if the Commission is to be able to undertake a speedy and thorough verification of Iraq's declarations regarding its prohibited programmes. The Commission, nevertheless, acknowledges that the materials already obtained, together with the admission that the relevant documentation was not all destroyed, is one of the most significant breakthroughs in the four years of its operations in Iraq, and will provide an invaluable source of verification material. What has been started should be completed by handing over the missing documentation identified above.

3. Rationale for Iraq's biological and chemical weapons

28. Iraq's intentions with regard to the operational use of its biological and chemical weapons have been subject to conflicting presentations by the Iraqi authorities in the period under review. On the one side, it was explained that the biological and chemical weapons were seen by Iraq as a useful means to counter a numerically superior force; on the other, they were presented as a means of last resort for retaliation in the case of a nuclear attack on Baghdad. Certain documentation supports the contention that Iraq was actively planning and had actually deployed its chemical weapons in a pattern corresponding to strategic and offensive use through surprise attack against perceived enemies. The known pattern of deployment of long-range missiles (Al Hussein) supports this contention. Iraq stated, during visits of both the Chairman and the Deputy Chairman, that authority to launch biological and chemical warheads was pre-delegated in the event that Baghdad was hit by nuclear weapons during the Gulf war. This pre-delegation does not exclude the alternative use of such a capability and therefore does not constitute proof of only intentions concerning second use. It is evident that the Commission must have a complete understanding of the concept behind each stage of the development of all proscribed weapons systems, together with their intended and actual deployment plans.

III. MISSILE ACTIVITIES

A. The monitoring system

29. Pursuant to the plan for ongoing monitoring and verification, approved by the Security Council in resolution 715 (1991), the Commission has established a multi-layered monitoring system in the missile area. The system is designed to cover essential elements of Iraq's missile and related research, development, testing and manufacturing facilities and non-proscribed missiles with ranges less than 150 kilometres as defined by the plan. The system is designed to compensate the limitations of one layer of the system with the strengths of other layers. The current monitoring system includes, inter alia:

30. On-site monitoring inspections. Such inspections are carried out without advance notice by a resident expert team based at the Commission's Baghdad Monitoring and Verification Centre (BMVC). These inspections include verification of Iraq's declarations under the plan, review of related facility documentation, inspection of items produced and production techniques, and inspection of all areas and buildings at each facility. Currently, over 30 different facilities are inspected on a routine basis, with the frequency of visits dependent on the nature of activities at the specific sites.

31. Continuous sensor monitoring. This is directed at critical areas of missile-related activities and dual-purpose machines. On-site cameras are connected to and can be viewed remotely from the BMVC. Furthermore, the BMVC staff collect videotapes from the monitored facilities every 30 days, or more frequently if required, for detailed analysis. Tamper-proof tags and labels are used to positively identify important equipment at the facilities to assist in the monitoring of their use, movement or disposal. Currently, over 120 pieces of missile related equipment carry UNSCOM tags and labels. The Commission regularly reviews the need to upgrade, replace or add additional sensors to improve its missile monitoring.

32. Special inspections. Special inspection teams are tasked to address specific issues, for example assessing non-proscribed ongoing missile research and development activities. These teams are staffed by highly qualified experts in specific fields who advise the Commission of potential modifications to the monitoring regime.

33. Compliance inspections. Such inspection teams are used to verify information available to the Commission on Iraq's activities. These teams are also used to determine if new facilities should be included in the monitoring regime.

34. Aerial surveillance. The Commission uses both helicopter and high-level surveillance assets to monitor activities and the infrastructure of relevant facilities throughout Iraq.

35. After completion of the baseline process for each site being monitored, the Commission began operating the ongoing monitoring and verification system for Iraq's missile and related facilities on 17 August 1994. Since that time, the Commission has performed over 450 inspections at a variety of missile facilities

and has installed over 40 video cameras at 16 facilities monitored for missile production-related activities. Iraq has continued to provide the support requested by the Commission in the conduct of these inspections, including, inter alia, access to production, quality control and inventory records; access to buildings, facilities or equipment located at the sites; installation of cameras and tags; and the provision of technical experts to explain designs, tests and production activities to the monitoring and inspection teams.

36. During the reporting period, the Commission conducted the second annual verification of Iraq's non-proscribed operational missiles as defined by Security Council resolutions 687 (1991) and 715 (1991), i.e. missiles with ranges less than 150 kilometres that are designed for use, or capable of being modified for use, in a surface-to-surface role with a range greater than 50 kilometres. The Commission uses tags to confirm that all such missiles are identified in Iraq and to ensure that these missile systems are not modified to ranges prohibited by the Security Council. The Commission has established modalities pursuant to which Iraq is required to present 10 per cent of its missiles, three times per year, to the Commission for its verification. The Commission selects the missiles for Iraq to present and the timing of these inspections. In accordance with the established procedures, Iraq submitted the requested number of missiles for verification by the inspection team during the second annual verification. No modifications of these missiles were detected.

37. The Commission has recently obtained information that Iraq has resumed its acquisition efforts in support of its missile facilities. Iraq placed a number of orders, both directly and indirectly (through middlemen and front companies), for the purchase of equipment, technologies, supplies and material for both missile- and non-missile-related activities at these facilities. Iraq explained that many of these efforts were in direct support of its Ababil-100 programme for indigenous development and production of surface-to-surface missiles with ranges between 100 and 150 kilometres. During the period since the last report in April 1995, Iraq has acknowledged these procurement activities, including the actual import, without notifications to the United Nations Sanctions Committee established under Security Council resolution 661 (1990), of equipment and materials. In most cases, Iraq has wrongly asserted that such equipment and materials were purchased within Iraq.

B. Destruction of proscribed items

38. In April 1995, the Commission completed an investigation of Iraq's acquisition and use of equipment for Project 1728 (production of liquid-propellant rocket engines) prior to the Gulf war. On 21 April, the Commission sent a letter to Iraq outlining measures that needed to be taken for the disposal of this equipment, including the destruction of five key pieces of production and testing equipment purchased specifically for proscribed missile activities. Iraq was also informed that all work must cease on equipment requiring destruction. The personnel in the facilities where this equipment was located apparently disregarded these instructions and continued to operate the machinery to produce parts for current missile programmes. The Commission detected the continued operation of this equipment, in contravention of the Commission's instructions, through several elements of its monitoring system,

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primarily the monitoring cameras. Iraq also tried to delay the destruction of the equipment. The relevant developments were reported by the Executive Chairman to the Security Council on 2 July 1995. Shortly thereafter, Iraq agreed to comply with the Commission's decision and the destruction of the equipment was completed by the end of July 1995.

C. Proscribed programme

39. During the period since the report in April 1995, the Commission has continued its investigations of Iraq's proscribed former missile activities. These investigations concentrated on the unresolved issues mainly connected with Iraq's past research and development activities. The Commission sought additional data from Iraq and its explanations concerning work on a number of undeclared missile designs or components, missile fuels and the connections between the missile programme and other proscribed activities. These issues were addressed during the rounds of high-level talks from May until early August 1995 and additionally by the inspection team UNSCOM 122/BM 33. At that time, Iraq provided some answers to the Commission's requests, but mainly limited its admissions to cases where the Commission had evidence of Iraq's activities. However, in the majority of cases in the period prior to mid-August 1995, Iraq tried to mislead the Commission by withholding information or by attributing the case on which information was requested to some other activity. Thus, Iraq specifically denied the existence of any biological warheads, test activity with chemical warheads, any work on advanced liquid-propellant missile systems, using new materials for missile airframes (like aluminium), and missile fuels (like UDMH). Iraq also continued, in the period indicated, to falsify its accounting of missiles, warheads and supporting/auxiliary equipment.

40. During the Executive Chairman's visit to Baghdad from 17 to 20 August 1995, following on the events described in paragraph 14 above, Iraq, in contradistinction to its attitude prior to that time, disclosed substantial new information related to its proscribed missile programme. Iraq acknowledged for the first time work on advanced rocket engines, including those with increased thrust or using UDMH fuel. Iraq also admitted to the production of proscribed rocket engines made of indigenously produced or imported parts and without cannibalization of the imported Soviet-made Scud engines. Iraq further admitted that the number and the purpose of static and flight tests of proscribed missiles had previously been misrepresented.

41. As described in paragraphs 24 to 27 above, the Commission obtained boxes with documents and materials including, in addition to written documentation, videotapes, films, microfiches and computer diskettes related to missile activities. Some prohibited missile components were also found in the boxes. Apparently these documents had at one time belonged to projects that were engaged in activities such as project 144 (modification and production of missile systems), the Karama project (production of missile guidance and control systems), project 1728 (production of liquid-propellant rocket engines) and Badr-2000 (two-stage solid-propellant missile). The Iraqi representatives who had worked on these projects explained that they had been ordered to prepare a selection of the most important documents and to hand them over to the special

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security organizations. In the view of the Commission, the boxes obtained by it do not contain the full record of proscribed missile activities or a complete set of documentation which could be expected to be found at such facilities. The Commission intends to exploit fully available documents in the verification process, while continuing to press for the handing over of all the relevant documents.

42. During the Executive Chairman's visit to Baghdad from 29 September to 1 October, and the UNSCOM 123/BM 34 inspection (27 September-1 October), the Iraqi authorities provided additional information on previously undisclosed activities. It appeared that Iraq considered this to be critical and essential information on its prohibited activities and it was therefore withheld from the Commission for more than four years. At the end of September 1995, the Commission obtained new information on Iraq's testing activity, including both static and flight testing of Scud variant missile systems; several new designs of longer-range missile systems; development and testing of new liquid-propellant engine designs; development and successful testing of a warhead separation system; an indigenous design of a 600 mm diameter supergun system; and three separate flight tests of chemical warheads. Some of the previously undisclosed designs included missiles that could reach targets at ranges of up to 3,000 kilometres. The Commission also obtained information of a special missile under design for delivery of a nuclear explosive device. Since these and previous declarations substantially change the scope of Iraq's missile programme, the Commission has requested, and Iraq has agreed to provide, a new full, final and complete disclosure (FFCD) for its proscribed missile activities.

43. New Iraqi disclosures, including production of indigenous rocket engines, have a severe impact on the Commission's accounting of proscribed weapons and equipment used in the missile programmes prohibited by Security Council resolution 687 (1991). So far Iraq has failed to provide conclusive evidence on the quantity of engines produced by Iraq. Thus, the Commission has no firm basis for establishing at this time a reliable accounting of Iraq's proscribed missiles.

44. Another serious complicating factor in establishing a new accounting of proscribed weapons and items in Iraq is associated with unilateral destruction allegedly carried out by Iraq in the summer of 1991 to which reference has already been made in paragraphs 21 and 22 above. The destruction of large quantities and varieties of proscribed items carried out at that time was disclosed by Iraq to the Commission only in March 1992. However, the Commission has come to the conclusion that this March declaration and Iraq's original FFCD of May 1992 had been intentionally falsified to cover activities that Iraq intended to withhold from the Commission at that time. For example, Iraq declared that 89 proscribed operational missiles were destroyed in summer 1991, although only 83 such missiles were actually destroyed. In this case, the inflated number seems to have been put forward by Iraq to cover undeclared static and flight test activities and its efforts to produce its own missiles. Iraq later presented an incorrect accounting of missile warheads - both imported and indigenously produced - to hide its projects involving unconventional and separating warheads. Iraq presented false figures on the quantity of destroyed imported missile components and other items. Iraq has agreed to provide a new

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declaration on the material balance of proscribed weapons and other prohibited items, in the new FFCD, to correct these and other false or misleading disclosures. Until it verifies Iraq's new declaration, the Commission will not be able to provide a definite accounting of weapons (missiles, launchers and supporting/auxiliary equipment) as well as equipment and materials used in the proscribed missile programme of Iraq.

45. As may be seen from the above, during much of the reporting period, Iraq has continued to withhold information related to its proscribed missile programme. For the most part, Iraq has provided new data only when there were clear indications that the Commission possessed information from other sources. However, after the Executive Chairman's visit in mid-August, Iraq volunteered some important new information and in several cases supported these disclosures with additional documents. Nevertheless, based on the totality of the information available to it, the Commission believes that Iraq has not yet disclosed fully and completely its proscribed missile activities. The information to be included in the forthcoming FFCD will be crucial for the Commission's verification of Iraq's compliance with its obligations. For this reason, Iraq needs to provide accurate and substantiated data, including documentary evidence to support its statements, and to make suggestions for speedy and effective verification.

46. The Commission intends to continue its intensive inspection and investigation missions under resolution 687 (1991), including application of new verification methods, in order to obtain a full and complete picture of Iraq's proscribed missile activities. Iraq's cooperation, including the provision of accurate information and supporting documentation, access to personnel involved in the relevant activities and support of the Commission's inspection and monitoring efforts will be required, on a continuous basis, in order to enable the Commission to achieve this objective in a speedy and efficient manner.

IV. CHEMICAL ACTIVITIES

A. The monitoring system

47. During the period under review, four additional baseline inspections were completed in the chemical area. Monitoring and verification protocols were prepared for one research institute and three chemical storage and production sites. These activities were conducted by the chemical monitoring team stationed at the Baghdad Monitoring and Verification Centre. The Commission has thus completed baseline inspections of 62 chemical sites and 18 universities, colleges and research institutes. Over 200 monitoring inspections have been undertaken by the chemical monitoring team to date. Some site protocols will be re-evaluated in the light of recent findings that sites outside of the Muthanna State Establishment were also involved in Iraq's chemical weapons programme, a fact which has been denied until very recently. It is anticipated that information from the documents obtained on 20 August 1995 will lead to inspections at newly identified sites not yet visited.

48. During monitoring inspections in June and July 1995, the chemical monitoring team detected the unauthorized movement and use of four major items

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of tagged equipment at two sites under monitoring. Iraq was immediately instructed to replace the equipment in its original position. This was done. The seriousness of this unauthorized activity and the attendant considerations of possible destruction of the equipment was underlined to Iraq at the highest level.

49. In addition to the monitoring tools and modalities described in paragraphs 30 to 34 of the chapter on missile activities in the present report, the Commission's chemical monitoring apparatus also includes 19 air samplers installed at 6 chemical production sites in Iraq. From 2 to 11 July 1995, a technical support team performed a retrofit of these samplers and reviewed their locations in order to optimize their use. As a result, several samplers were moved and some added or removed from sites. The upgraded samplers are now better equipped to withstand difficult conditions, such as humidity and chemical extremes.

50. Ten sampling pumps and supporting calibration equipment have been provided to the chemical monitoring team. This gives the team the capability to take air samples at any location in Iraq. An infrared spectrometer and a melting-point determination apparatus are currently under procurement to enlarge the range of samples which can be analysed.

51. A reverse osmosis water purification system and a complete air filtration system for the chemical fume hood has been installed in the chemical laboratory at the Baghdad Monitoring and Verification Centre. These will enhance the health and safety of personnel working in the laboratory. To ensure the health and safety of monitoring personnel in the field, protective equipment has also been procured, including HEPA filters, a variety of respirators and pressed air suits.

B. Proscribed programme

52. The new information obtained by the Commission in August and September 1995 clearly shows that Iraq's full, final and complete disclosure presented on 25 March 1995, the attachment of 27 March 1995 and the addenda to the attachment, received on 29 May 1995, are incorrect and incomplete. The new information was gathered initially from material obtained in Iraq on 20 August 1995 and subsequently admitted by Iraq during the course of technical talks undertaken by the UNSCOM 124/CW 25 inspection team. The material includes documents, videotapes, microfiches and microfilm records and computer discs spanning a large part of Iraq's chemical weapons programme.

53. In response to the Commission's statements that the March 1995 FFCD was no longer adequate, on 7 October 1995, Iraq provided the Commission with a number of revised chapters. The revised chapters, however, cover only those areas already raised by UNSCOM 124/CW 25 as examples of shortcomings in the existing FFCD. The March 1995 FFCD omitted information on major militarily significant chemical weapons capabilities, such as additional types of warfare agents, advanced agent and precursor production, stabilization and storage technologies, new types and numbers of munitions and field trials and additional sites involved in the programme.

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54. During the technical talks held in Baghdad in September 1995, it became clear that Iraq was continuing to withhold important information on the extent and technical depth of its chemical weapons programme. Iraq officially stated that the March 1995 FFCD was complete and accurate and that there was no additional information available. Only belatedly did it admit shortcomings in its latest FFCD.

55. Of greatest concern are new revelations concerning the timing, extent and success of Iraq's programme for the production of the nerve agent VX. In the March 1995 Iraqi FFCD and its amendments, it was asserted that the VX programme existed only from April 1987 to September 1988, conducted only laboratory-scale production and had been abandoned because of poor agent quality and instability.

56. Based on the new findings, it is now clear that the VX programme began at least as early as May 1985 and continued without interruption until December 1990. The Commission has concluded that VX was produced on an industrial scale. Precursor and agent storage and stabilization problems were solved. Furthermore, one of Iraq's documents on this subject, dated 1989, proposes "the creation of strategic storage of the substance (VX - hydrochloride, one step from conversion into VX) so it can be used at any time if needed".

57. Significant in this context is Iraq's admission, in September 1995, of the production in 1990 of 65 tonnes of choline, a chemical used exclusively for the production of VX. This amount would be sufficient for the production of approximately 90 tonnes of VX. Furthermore, Iraq had, inter alia, over 200 tons each of the precursors phosphorous pentasulphide and di-isopropylamine. These quantities would be sufficient to produce more than 400 tonnes of VX. At present, there is no conclusive evidence to support Iraq's claims concerning the complete disposal of these two precursors and the choline.

58. Iraq's recent declarations concerning the weaponization of biological agents has rendered invalid the current material balance for chemical munitions and the quantities of weaponized chemical agents. This derives from the fact that the munitions, including missile warheads, declared as being used for biological agents had previously been declared as used for chemical weapons purposes.

59. Iraq has also admitted the development of prototypes of binary sarin-filled artillery shells, 122 mm rockets and aerial bombs. However, the new documentation shows production in quantities well beyond prototype levels. Iraq has also admitted three flight tests of long-range missiles with chemical warheads, including one, in April 1990, with sarin.

60. Iraq admitted that it had received significant assistance from abroad. This support included, at a minimum, the provision of munitions specifically designed for chemical weapons fill, technical support for the development of a VX precursor manufacturing process and the provision of technical personnel directly to the Muthanna State Establishment (MSE).

61. The recently obtained documentation contains significant information on procurement and financing for MSE. These records indicate that at least

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\$100 million in procurement remains undeclared. This finding contradicts Iraqi statements that all MSE procurement had been declared.

62. The new information on Iraq's proscribed chemical weapons programme will require appropriate follow-up action, including technical analysis of the documents and expert seminars. The documentation shows Iraq's efforts to produce indigenously key precursors for chemical weapons, for example, the synthesis of cyclohexanol (a GF precursor) from phenol and the synthesis of di-isopropylamine (a VX precursor) from ammonia and acetone. In the light of this, certain proposals by Iraq to construct new facilities with dual-use capabilities will have to be considered very carefully by the Commission and the monitoring system adjusted accordingly.

63. The new information invalidates material balances provided in the March 1995 FPCD and subsequent amendments. At the present time also the Commission cannot exclude the potential existence of stocks of VX, its direct precursors and undeclared munitions in Iraq. In these circumstances, the Commission is requiring a new full, final and complete disclosure from Iraq which will give a coherent and true account of its chemical weapons programme.

V. BIOLOGICAL ACTIVITIES

A. The monitoring system

64. Monitoring in the biological area began in full on 4 April 1995, preceded by a four-month interim monitoring phase. The scope of activities and sites to be encompassed by the monitoring needs to be broad because of the inherent dual-use nature of biological technology and the ease with which civilian facilities can be converted for biological weapons purposes. The Commission has been compelled to cast a wider net in the biological field because of Iraq's incomplete disclosure of the full extent of its past biological warfare activities. In actively seeking to establish an understanding of such a programme, the Commission has had to rely less on Iraq's openness and more on its own findings.

65. Currently, 79 sites throughout Iraq are included in the biological monitoring and verification regime. These sites are comprised of:

- (a) Five sites currently known to have played a significant role in Iraq's past biological weapons programme;
- (b) Five vaccine or pharmaceutical facilities;
- (c) Thirty-five research and university sites which have significant technology or equipment;
- (d) Thirteen breweries, distilleries and dairies with dual-purpose capabilities;
- (e) Eight diagnostic laboratories;

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- (f) Five acquisition and distribution sites of biological supplies/equipment;
- (g) Four facilities associated with biological equipment development;
- (h) Four product development organizations.

Of these sites, 9 are category A (most intense monitoring), 15 are category B, 10 category C and 45 category D.

66. The monitoring concept that has been implemented by the Commission includes: equipment inventory at all sites where dual-purpose equipment is located; notifications by Iraq of transfer, modification and acquisition of such equipment; placement of cameras at selected sites to observe change in activity or use of equipment; routine inspections of sites by a Baghdad-based monitoring team, primarily on a no-notice basis, and on a variable frequency; and identification of factors related to "break-out" scenarios at sites and of their possible role in proscribed activities. These monitoring activities from the Baghdad Monitoring and Verification Centre are reinforced by special inspections where investigations by most experienced specialists are desired. Key aspects of the baseline process, including identification of additional sites of interest and their capability, identification of undeclared dual-use equipment, assessment of their present and future use, are also ongoing activities that are incorporated into the monitoring process.

67. During the reporting period since 10 April 1995, over 150 inspections or visits to different sites have been made by the biological monitoring team, including over 20 inspections of the Al Hakam facility. At three sites, including Al Hakam, video monitoring, using a total of 22 cameras, supplement the other monitoring efforts. Both realtime images and recorded videotapes are analysed and the information is incorporated into the monitoring process.

B. Proscribed programme

68. While ongoing monitoring concentrates mainly on dual-use biological capabilities in Iraq, an efficient and effective monitoring is not possible without a full understanding of Iraq's proscribed biological activities. In its report to the Security Council last April (S/1995/284), the Commission stated that "it has come to the conclusion that Iraq has not provided a full and comprehensive disclosure of its past military biological programme or accounted for items and materials for that programme".

69. Up to the middle of the reporting period, Iraq continued to deny having ever had any offensive biological weapons programme or activities. It should be recalled that, in March 1995, Iraq officially submitted a new full, final and complete disclosure in the biological area which, like its original FFCD in May 1992, and other declarations since the adoption of resolution 687 (1991), adhered to the position that Iraq had had only a very small defensive biological research programme conducted by 10 people from 1985 until the autumn of 1990. The March 1995 FFCD was so contrary to the information in the Commission's possession that the Commission saw no merit in initiating verification of the

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document. Essentially a stalemate developed between Iraq and the Commission. The Commission continued to collect information related to Iraq's biological weapons programme while, in parallel, trying to persuade Iraq, through a dialogue, to present a true declaration covering its biological weapons activities.

70. In April and May 1995, Iraq continued to display an uncooperative attitude. During the Executive Chairman's visit to Iraq (29 May-1 June), Iraq refused even to meet with the biological experts accompanying the Chairman. The stalemate continued through June, but with promises from Iraq of information about its biological weapons programme to be provided only in late June or early July, if Iraq at that time concluded that there were indications that progress was being made towards the reintegration of Iraq into the international community (see para. 10 above).

71. On 1 July 1995, during the Executive Chairman's visit to Iraq (see para. 11 above), Iraq did provide an oral overview of its past programme, admitting for the first time that it indeed had had an offensive biological weapons programme from April 1986 to September 1990. But while acknowledging an offensive programme that included the production of large quantities of two warfare agents at the Al Hakam facility, the overview, nevertheless, firmly denied weaponization of these or any other biological warfare agents. During technical discussions that followed this oral presentation, the Commission's experts indicated that several major issues related to Iraq's biological weapons programme - for example weaponization, earlier initiation date of the programme, larger involvement of Iraq's other establishments, and the material balance of supplies and agents - were still outstanding and urged Iraq to address those issues in a new FFCD that Iraq undertook to submit to the Commission.

72. In the second half of July, Iraq prepared a draft FFCD and the UNSCOM 121/BW 26 team was sent to Iraq to review the draft together with Iraqi personnel in order to assist them in the preparation of a document that would be amenable to speedy and effective verification.

73. The July draft declaration contained many areas in which Iraq's disclosures were inconsistent with the Commission's information or where information was missing or unclear. These deficiencies followed a pattern: they appeared to be designed to deny information that would either provide evidence of weaponization or reveal military connections with the biological weapons programme. There was also a strong suspicion that Iraq's new accounts of agent production and complex growth media consumption were manipulated to provide what Iraq hoped would pass as a credible accounting for the missing media, as previously described by the Commission in its April 1995 report (S/1995/284, paras. 62-69). The UNSCOM 121/BW 26 team strongly advised Iraq not to submit a deficient declaration.

74. Nevertheless, on 4 August 1995, Iraq officially submitted its FFCD to the Executive Chairman. This new FFCD was consistent with Iraq's oral presentation of 1 July and the July draft and ignored the Commission's suggestions. Because of the acknowledgement that Iraq's programme was offensive in nature, it was considered a breakthrough in the stalemate that had existed between the Commission and Iraq. The Commission initiated verification efforts, including

analysis by the Commission's and visiting experts of various portions of Iraq's declaration; inquiries with States concerning supplier information; detailed assessment of the new FFCD and correlation with information available to the Commission.

75. On 17 August 1995, after the events described in paragraph 14 above, Iraq informed the Executive Chairman that the full, final and complete disclosure of 4 August should not be considered valid. Iraq then presented to the Chairman a vastly different account of Iraq's past biological warfare programme that included weaponization, additional agents and additional sites involved in the programme. Iraq undertook to submit to the Commission a new FFCD. During this visit, some documents were obtained which related to the proscribed biological weapons programme. On 22 August 1995, a biological expert team (UNSCOM 125/BW 27) visited Baghdad in order to collect detailed information and clarifications on the revelations which had been presented during the Chairman's visit. A summation of the most recent revelations of Iraq's biological weapons programme follows. It should be stressed that it is solely based on declarations made by Iraq since mid-August, which remain subject to verification. At this time, therefore, the Commission can give no assurances as to the correctness and comprehensiveness of that information:

(a) Iraq stated that, in 1974, the Government had adopted a policy to acquire biological weapons. In 1975, a research and development biological weapons programme was established under the Al Hazen Ibn Al Haytham Institute at a site located in Al Salman. The work was poorly directed. Coupled with a lack of appropriate facilities and equipment, it was said the Institute achieved little and it closed in 1978;

(b) The failure of the Al Hazen Institute was claimed to be a severe setback for the programme and the following years are alleged to be devoid of any biological weapons-related activity. In the early period of the Iran/Iraq war (perhaps in 1982 or 1983), a prominent Iraqi microbiologist wrote a report expressing his concerns on scientific developments relating to biological warfare agents and suggesting that research in this subject be commenced in Iraq. It is still uncertain whether this report was followed up, but in 1985 the Muthanna State Establishment, Iraq's main facility for chemical weapons research and development, production and weaponization, recommended the commencement of a biological weapons programme. In May or June 1985, Muthanna sought and obtained endorsement from the Ministry of Defence for this programme. It was anticipated that the biological weapons research would be production-oriented and thus, in addition to laboratory-scale equipment, a pilot plant in the form of one 150-litre fermenter was purchased by Muthanna. Throughout 1985, personnel were recruited by Muthanna and by the end of the year, a staff of 10 was working on biological weapons research;

(c) Initial work at Muthanna was said to focus on literature studies, until April 1986, when bacterial strains were received from overseas. Research then concentrated on the characterization of Bacillus anthracis (anthrax) and Clostridium botulinum (botulinum toxin) to establish pathogenicity, growth and sporulation conditions, and their storage parameters. (Anthrax is an acute bacterial disease of animals and humans that can be incurred by ingestion or inhalation of the bacterial spores or through skin lesions. It produces an

infection resulting in death in days to weeks after exposure. Botulinum toxin produces an acute muscular paralysis resulting in death of animals or humans.) As claimed by Iraq, there was no production of agents and the imported fermenters at Muthanna were not used. However, Muthanna was still looking ahead to biological warfare agent production and wrote a report to the Ministry of Defence recommending that the former single-cell protein plant at Taji be taken over by Muthanna for the production of botulinum toxin. The Ministry of Defence agreed but, in early 1987, before the plan could be implemented, the proposal went into abeyance for a short time owing to administrative reasons;

(d) In May 1987, the biological weapons programme was transferred from Muthanna to Al Salman. The reason for this was said to be that the biological work interfered with the (presumably higher-priority) chemical weapons programme at Muthanna. At Al Salman, the biological weapons group administratively came under the Forensic Research Department of the Technical Research Centre (TRC) of the Military Industrialization Corporation. After a slow beginning, it appeared that the biological weapons programme flourished at Al Salman. Equipment, including the fermenters, was transferred from Muthanna, new equipment was acquired, and new staff joined the biological weapons group to bring the workforce up to about 18. The research at Al Salman shifted to issues related more to the application of the agents as biological weapons. The effects on larger animals, including sheep, donkeys, monkeys and dogs, were studied within the laboratory and inhalation chamber, as well as in the field. Initial weapons field trials were conducted in early 1988. Studies of scale-up production were initiated on botulinum toxin and anthrax;

(e) The earlier proposal for the acquisition of a biological weapons production site was revived and the former single-cell protein plant at Taji was taken over by TRC in mid-1987. The plant was said to be in a run-down condition and it was not until early in 1988 that it was made operational. With a workforce of eight people, and using one 450-litre fermenter, production of botulinum toxin commenced in February or March 1988 and continued until September/October of that year. Production of botulinum toxin also was carried out at Al Salman in flasks or laboratory fermenters;

(f) Initial production fermentation studies with anthrax at Al Salman used 7- and 14-litre laboratory-scale fermenters at the end of 1988. From the beginning of 1989, the 150-litre fermenter transferred from Muthanna was used to produce Bacillus subtilis, a simulant for anthrax as a biological warfare agent. After five or six runs of producing subtilis, anthrax production began at Al Salman around March 1989. About 15 or 16 production runs were performed, producing up to 1,500 litres of anthrax, which was concentrated to 150 litres. Additional production with the laboratory fermenters was also accomplished;

(g) Towards the end of 1987, a report on the success of biological weapons work by TRC was submitted to MIC. This resulted in a decision to enter the full-scale production phase for a biological weapons programme;

(h) In March 1988, a new site for biological weapons production was selected at a location now known as Al Hakam. The project was given the designator "324". The design philosophy for the Al Hakam plant was taken from the chemical weapons research and production facility at Muthanna: the

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buildings were to be well separated, research areas were segregated from production areas and the architectural features of Muthanna buildings copied where appropriate. The plan for the new facility at Al Hakam envisaged research and development, production and storage of biological warfare agents, but not munitions filling. Construction of the production buildings at the northern end of the Al Hakam site was largely complete by September 1988 after which work commenced on erection of the laboratory buildings;

(i) In 1988, a search for production equipment for the biological weapons programme was conducted in Iraq. Two 1,850-litre and seven 1,480-litre fermenters from the Veterinary Research Laboratories were transferred to Al Hakam in November 1988. The 450-litre fermenter line at Taji, which was at the time used in the production of botulinum toxin, was also earmarked for transfer to Al Hakam and was relocated there in October 1988. From mid-1988, large fermenters were also sought from abroad, but after Iraq completed a contract for a 5,000-litre fermenter, an export licence was not granted;

(j) At Al Hakam, production of botulinum toxin for weapons purposes began in April 1989 and anthrax in May 1989. Initially much of the fermentation capacity for anthrax was used for the production of anthrax simulant for weapons field trials. Production of anthrax itself, it is claimed, began in earnest in 1990. In total, about 6,000 litres of concentrated botulinum toxin and 8,425 litres of anthrax were produced at Al Hakam during 1990;

(k) From the early period of the biological weapons programme at Al Salman, there was interest in other potential biological warfare agents beyond anthrax and botulinum toxin. It became the policy to expand the biological weapons programme into these other fields. Thus, from the design phase of Al Hakam as a biological weapons research, production and storage facility, there were plans for such diversification, including facilities to work on viruses and laboratory space for genetic engineering studies;

(l) In April 1988, in addition to anthrax and botulinum toxin, a new agent, Clostridium perfringens (gas gangrene), was added to the bacterial research work at Al Salman. (Clostridium perfringens produces a condition known as gas gangrene, so named because of the production of gaseous rotting of flesh, common in war casualties requiring amputation of limbs.) In August 1989, work on perfringens was transferred from Al Salman to Al Hakam;

(m) In May 1988, studies were said to be initiated at Al Salman on aflatoxin. (Aflatoxin is a toxin commonly associated with fungal-contaminated food grains and is known for its induction of liver cancers. It is generally considered to be non-lethal in humans but of serious medical concern because of its carcinogenic activity.) Later research was also done on trichothecene mycotoxins such as T-2 and DAS. (Trichothecene mycotoxins produce nausea, vomiting, diarrhoea and skin irritation and, unlike most microbial toxins, can be absorbed through the skin.) Research was conducted into the toxic effects of aflatoxins as biological warfare agents and their effect when combined with other chemicals. Aflatoxin was produced by the growth of the fungus *aspergillus* in 5-litre flasks at Al Salman;

(n) In 1989, it was decided to move aflatoxin production for biological weapons purposes to a facility at Fudaliyah. The facility was used for aflatoxin production in flasks from April/May 1990 to December 1990. A total of about 1,850 litres of toxin in solution was declared as having been produced at Fudaliyah;

(o) Another fungal agent examined by Iraq for its biological weapons potential was wheat cover smut. (Wheat cover smut produces a black growth on wheat and other cereal grains; contaminated grain cannot be used as foodstuff.) After small production at Al Salman, larger-scale production was carried out near Mosul in 1987 and 1988 and considerable quantities of contaminated grain were harvested. The idea was said not to have been further developed; however, it was only sometime in 1990 that the contaminated grain was destroyed by burning at the Fudaliyah site;

(p) Another toxin worked for weapons application was ricin. (Ricin is a protein toxin derived from castor bean plants that is highly lethal to humans and animals. When inhaled, ricin produces a severe diffuse breakdown of lung tissue resulting in a haemorrhagic pneumonia and death.) It appears that work started in 1988 at Al Salman. The first samples of ricin were supplied from the Sammarra drug factory and after some initial toxicological tests in conjunction with Muthanna, the quantity required for a weapons test was determined. Ten litres of concentrated ricin were prepared. A weapons trial was conducted with the assistance of Muthanna using artillery shells. The test was considered to be a failure. The project was said to have been abandoned after this;

(q) Work on virus for biological weapons purposes started at Al Salman in July 1990. Shortly thereafter, a decision was taken to acquire the Foot and Mouth Disease facility at Daura and it was taken over for biological weapons purposes, in addition to the continued production of vaccines. It was decided that the Daura plant within the biological weapons programme would include facilities for bacteriology, virology and genetic engineering. Three viral agents for the biological weapons programme were obtained from within Iraq: haemorrhagic conjunctivitis virus, a rotavirus and camel pox virus. (Haemorrhagic conjunctivitis is an acute disease that causes extreme pain and temporary blindness. Rotavirus causes acute diarrhoea that could lead to dehydration and death. Camel pox causes fever and skin rash in camels; infection of humans is rare.) It was stated that very little work had been done on these viruses and none had been produced in quantity;

(r) Early in 1988, efforts began in the weaponization of biological warfare agents and some of the senior scientists involved in the biological weapons programme at TRC were sent to Iraq's munitions factories to familiarize themselves with this aspect. At about the same time, TRC first discussed with the Muthanna State Establishment weaponization of biological warfare agents and it was agreed that, because of Muthanna's experience in the weaponization of chemical agents, the Establishment would also provide the necessary assistance for the selection of weapons types for warfare agents and the conduct of field trials;

(s) The first field trials of biological weapons were said to have been conducted in March 1988 at Muthanna's weapons test range, Muhammadiyat. Two

tests were done on the same day, one using the anthrax simulant, Bacillus subtilis, and the other using botulinum toxin. The munitions chosen for the tests were aerial bombs positioned on adjacent stands. The effects were observed on test animals (for botulinum toxin) or on Petri dishes (for subtilis). The first tests of both agents were considered failures. The agents in both cases did not spread far enough. Later in March, the second field trial with the same weapons systems was said to have been conducted and it was considered successful;

(t) No further weapons field trials were claimed to have been carried out for the next 18 months. In November 1989, further weaponization trials for anthrax (again using subtilis), botulinum toxin and aflatoxin were conducted, this time using 122 mm rockets, again at Muhammadiyah. These tests were also considered a success. Live firings of filled 122 mm rockets with the same agents were carried out in May 1990. Trials of R400 aerial bombs with Bacillus subtilis were first conducted in mid-August 1990. Final R400 trials using subtilis, botulinum toxin and aflatoxin followed in late August 1990;

(u) After 2 August 1990, the date of Iraq's invasion of Kuwait, Iraq's biological weapons programme was drastically intensified: the emphasis was shifted to production and later to weaponization of produced biological warfare agents. The foot and mouth disease plant at Daura was converted to biological weapons production. The six vaccine fermenters with ancillary equipment at the plant were used for production of botulinum toxin from November 1990 until 15 January 1991, by which time about 5,400 litres of concentrated toxin had been produced. It was decided that there was an additional requirement for anthrax production and the fermenters at Al Hakam that had been previously used for the production of botulinum toxin there were modified to meet the requirements for increased anthrax production. Production of perfringens for biological weapons purposes also began at Al Hakam in August 1990 using the 150-litre fermenter which had been relocated from Al Salman. A total of 340 litres of concentrated perfringens was produced;

(v) In December 1990, a programme was initiated to develop an additional delivery means, a biological weapons spray tank based on a modified aircraft drop tank. The concept was that tanks would be fitted either to a piloted fighter or to a remotely piloted aircraft to spray up to 2,000 litres of anthrax over a target. The field trials for both the spray tank and the remotely piloted vehicle were conducted in January 1991. The test was considered a failure and no further effort towards further development was said to have been made. Nevertheless, three additional drop tanks were modified and stored, ready for use. They are said to have been destroyed in July 1991. The prototype spray tank used for trials was claimed to have been destroyed during the Gulf war bombing;

(w) Weaponization of biological warfare agents began on a large scale in December 1990 at Muthanna. As declared, the R400 bombs were selected as the appropriate munition for aerial delivery and 100 were filled with botulinum toxin, 50 with anthrax and 16 with aflatoxin. In addition, 25 Al Hussein warheads, which had been produced in a special production run since August 1990, were filled with botulinum toxin (13), anthrax (10) and aflatoxin (2). These

weapons were then deployed in early January 1991 at four locations, where they remained throughout the war;

(x) In summary, Iraq has declared the production of at least 19,000 litres of concentrated botulinum toxin (nearly 10,000 litres were filled into munitions), 8,500 litres of concentrated anthrax (some 6,500 litres were filled into munitions) and 2,200 litres of concentrated aflatoxin (1,580 litres were filled into munitions);

(y) Iraq declared that it had decided to destroy biological munitions and the remaining biological warfare bulk agent after the Gulf war. An order for destruction was claimed to have been given orally, and no Iraqi representative seems to be able to recall an exact date for the order or the dates of destruction operations. The order was said to have been given some time in May or June 1991. All filled biological bombs were relocated to one airfield and deactivation chemicals added to agent fill. The bombs were then explosively destroyed and burnt, and the remains buried. A similar disposal technique was used for the missile warheads at a separate site. In late August 1995, Iraq showed to an UNSCOM team a location which it claimed to be a warhead destruction site. However, later on, Iraq changed its story and was unable to identify with any degree of certainty the exact location of warheads destruction operations;

(z) Of the bacterial bulk agent stored at Al Hakam, Iraq stated that a similar deactivation procedure had been adopted. The detoxified liquid was emptied into the facility's septic tank and eventually dumped at the site. About 8,000 litres of concentrated botulinum toxin, over 2,000 litres of concentrated anthrax, 340 litres of concentrated perfringens and an unspecified quantity of aflatoxin, according to Iraq's declaration, were destroyed at Al Hakam.

76. Iraq's biological weapons programme as described to the Commission embraced a comprehensive range of agents and munitions. Agents under Iraq's biological weapons programme included lethal agents, e.g. anthrax, botulinum toxin and ricin, and incapacitating agents, e.g. aflatoxin, mycotoxins, haemorrhagic conjunctivitis virus and rotavirus. The scope of biological warfare agents worked on by Iraq encompassed both anti-personnel and anti-plant weapons. The programme covered a whole variety of biological weapons delivery means, from tactical weapons (e.g. 122 mm rockets and artillery shells), to strategic weapons (e.g. aerial bombs and Al Hussein warheads filled with anthrax, botulinum toxin and aflatoxin) and "economic" weapons, e.g. wheat cover smut. Given the Iraqi claim that only five years had elapsed since its declared inception in 1985, the achievements of Iraq's biological weapons programme were remarkable.

77. The achievements included the production and actual weaponization of large quantities of bacterial agents and aflatoxin and research on a variety of other biological weapons agents. A special dedicated facility, Al Hakam, for biological weapons research and development as well as large-scale production was under construction, with most essential elements completed at the time of the Gulf war and production and storage capabilities operational. A number of other facilities and establishments in Iraq provided active support for the biological weapons programme. The programme appears to have a degree of balance

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suggesting a high level of management and planning that envisioned the inclusion of all aspects of a biological weapons programme, from research to weaponization. It is also reasonable to assume that, given that biological weapons were considered as strategic weapons and were actually deployed, detailed thought must have been given to the doctrine of operational use for these weapons of mass destruction.

78. It appears that, until August 1990, the biological weapons programme had been developing at a steady pace, continuing to expand and diversify. In August 1990, a "crash" programme was launched and the imperatives of production and weaponization took over.

79. The documentation on Iraq's biological weapons programme obtained by the Commission in August 1995 appears to represent a fraction of all the documents generated under the programme. For example, studies were described orally by Iraq to the Commission that are not included in any of the documentation. Some of the studies referred to in the documents differ significantly from those described to the Commission. Information available to the Commission from other sources does not correspond in important aspects to the information provided by Iraq.

80. In spite of the substantial new disclosures made by Iraq since mid-August, the Commission does not believe that Iraq has given a full and correct account of its biological weapons programme. The Commission intends to continue its intensive inspection, verification and analytical efforts with the objective of presenting to the Security Council, as soon as possible, its assessments of Iraq's compliance with the biological weapons-related provisions of Security Council resolution 687 (1991). Success will depend on Iraq's cooperation with these efforts and its complete openness, including provision to the Commission of all documentation and of a truly full, final and complete disclosure of Iraq's proscribed biological weapons programme.

VI. NUCLEAR ACTIVITIES

81. The Director General of IAEA is reporting separately on the activities of the UNSC 687 Action Team set up to implement paragraphs 12 and 13 of Security Council resolution 687 (1991) and the IAEA plan for ongoing monitoring and verification approved under resolution 715 (1991) (S/22872/Rev.1 and Corr.1).

82. The Special Commission continues, in accordance with paragraph 9 (b) (iii) of resolution 687 (1991) and paragraph 4 (b) of resolution 715 (1991), to provide its assistance and cooperation to the IAEA Action Team through the provision of special expertise and logistical, informational and other operational support for the carrying out of the IAEA plan for ongoing monitoring and verification. In accordance with paragraph 9 (b) (i) of resolution 687 (1991) and paragraph 4 (a) of resolution 715 (1991), it designates sites for inspection. In accordance with paragraph 3 (iii) of resolution 707 (1991), it decides on requests from Iraq to move or destroy any material or equipment relating to its nuclear weapons programme or other nuclear activities. Furthermore, it continues, in accordance with paragraph 4 (c) of resolution 715 (1991), to perform such other functions, in cooperation in the nuclear field

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with the Director General of IAEA, as may be necessary to coordinate activities under the plans for ongoing monitoring and verification, including making use of commonly available services and information to the fullest extent possible, in order to achieve maximum efficiency and optimum use of resources.

83. During the current reporting period, the Commission has reviewed and concurred with a number of IAEA evaluations of Iraqi requests to relocate materials and equipment within Iraq, participated with IAEA teams during routine inspections, provided, through the German Government, fixed-wing (C-160) and rotating-wing (CH-53G) aircraft for the transport of IAEA inspectors into Iraq from Bahrain and between points within Iraq and provided the UNSC 687 Action Team with working room and supporting facilities at the Baghdad Monitoring and Verification Centre.

84. Close coordination between IAEA and the Commission is already ongoing in the management and control of machine tool movements within Iraq, and a better integration between the IAEA and UNSCOM systems of survey has been implemented, for example for machines located at the Nassr State Establishment, which are under both missile and nuclear monitoring. Cross-disciplinary inspections have been more frequent in order to increase the information flow and develop cross-fertilization between the specialized teams. IAEA and the Commission also cooperated in the initial assessment of the documents obtained in Iraq on 20 August 1995.

85. The Commission's nuclear experts will participate in certain inspections decided by the Action Team during the coming months. Regular meetings are now scheduled, alternatively in New York and Vienna, to exchange information from all sources and to plan cross-disciplinary inspections. Commission experts regularly visit Vienna to update the IAEA photo library. The Commission's experts are continuing to participate in IAEA's negotiations with the Russian Federation regarding the sale of the nuclear materials removed from Iraq and reprocessed in Russia.

VII. OTHER ACTIVITIES

A. Export/import mechanism

86. As mentioned in the April 1995 report, the joint proposal prepared by the Special Commission and IAEA for the export/import mechanism called for in paragraph 7 of Security Council resolution 715 (1991) was submitted to the Sanctions Committee in February 1995. Upon receipt of the concurrence of that Committee, it is to be transmitted to the Council for its approval.

87. In the course of the consideration of the proposal by the Sanctions Committee, certain delegations requested information on the modalities which would be followed by the Special Commission and IAEA when implementing the mechanism in Iraq. On 17 July 1995, the Executive Chairman of the Commission sent a letter to the Chairman of the Sanctions Committee responding to this request. In that letter, the Chairman pointed out that the Security Council had on several occasions confirmed that the sole responsibility for carrying out their mandates in Iraq rested with the Commission and IAEA. Nevertheless, the

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Commission and IAEA had kept the Council fully informed of their activities and their *modus operandi*. In keeping with that practice, it was useful to indicate the general principles which would be followed in implementing the mechanism in Iraq.

88. In his letter, the Executive Chairman explained that an office of export/import specialists would be established in the Baghdad Monitoring and Verification Centre which would serve as an administrative clearing house for communications from Iraq regarding the notification forms which it would be required to submit. That office and the Centre would also implement inspections within Iraq to ensure that the mechanism was being complied with. These inspections would be as vigorous as necessary to ensure that no violations of the export/import regime would occur. In this regard, the Commission and the IAEA intended to rely on their full rights under the relevant Security Council resolutions (including resolutions 687 (1991), 707 (1991) and 715 (1991), the plans for ongoing monitoring and verification (S/22871/Rev.1 and S/22872/Rev.1 and Corr.1), the privileges and immunities as set forth in the exchange of letters between the United Nations and Iraq of 6 and 17 May 1991 and the decision to be taken by the Security Council approving the mechanism.

89. The letter further stated that inspections under the mechanism would take place not only at the declared end-user sites where notified items would be tagged, as appropriate, and entered into the site protocols, but would also be conducted anywhere else in Iraq, including points of entry into Iraq, where there was reason to believe that notified items or dual-use items in respect of which there should have been notification might be found. To ensure Iraqi compliance the monitoring activities would be carried out in whatever ways yielded the most effective results, whether by monitoring end-user sites, or border crossings, or other locations.

90. The Executive Chairman proposed, when the Sanctions Committee was in a position to forward the proposal for the mechanism to the Security Council, as the tripartite proposal called for in paragraph 7 of resolution 715 (1991), that it should be accompanied, for purposes of information, by his letter setting out in general terms the modalities which it was intended would be followed in implementing the mechanism.

91. On 20 July 1995, the Sanctions Committee resumed consideration of the Special Commission's and IAEA's joint proposal for the export/import mechanism, together with the Executive Chairman's letter of 17 July. The Committee approved the proposal and the suggestion of the Executive Chairman that its transmission to the Council should be accompanied by the letter of 17 July. Because of a request, formal transmission to the Council has been postponed. Transmission is expected to take place as soon as all members indicate the concurrence of their Governments.

92. In the meantime, the Special Commission has continued its efforts to prepare for the implementation of the mechanism after its adoption by the Security Council so as to be able to put it into effect as of such time as the Council directs.

B. National implementation measures

93. There have been no new developments since the Commission's reports in April and June 1995 regarding the national implementation measures which Iraq is required to take under the plans for ongoing monitoring and verification. The Commission has continued to pursue the matter and to press for the adoption of the necessary legislation. On each occasion that the matter has been raised, the Iraqi representatives have stated that the legislation is with the Office of the Presidency and that no problems were foreseen in its adoption. Assurances that such adoption would be forthcoming in a matter of days or weeks have not been fulfilled. The absence of this legislation, almost four years after the adoption of resolution 715 (1991) approving the plans for ongoing monitoring and verification, is of great concern to the Commission. There is no doubt that the enactment of this legislation, inter alia, prohibiting Iraqi citizens from engaging in activities proscribed by resolution 687 (1991), would be regarded as an indication of Iraq's will to comply fully with the requirements of the resolution.

C. Aerial surveillance

94. The aerial imagery provided by the Commission's high-altitude surveillance aircraft (U-2) and the Baghdad-based aerial inspection team continues to be an essential tool for the monitoring regime and for the investigation of new sites. To date, over 600 missions have been undertaken by the aerial inspection team and 269 missions by the U-2.

95. The establishment of the photographic development laboratory in the Monitoring Centre in Baghdad has facilitated the swift processing and review of the aerial photographic product. The capability to process photography at the Centre has also proved a useful asset for ground inspection teams.

VIII. FINANCE, ORGANIZATION AND AIR SUPPORT

96. The financial situation of the Special Commission is more precarious than ever. Funds, either from frozen Iraqi assets or provided as contributions to the Commission, have been trickling into the escrow account established under Security Council resolution 778 (1992) on a very irregular basis. While funding has been secured for the remainder of 1995, funds have yet to be identified for 1996. The level of operational expenditures of the Commission from its inception in May 1991 until the end of 1995 will have reached \$100 million. The operational budget of the Commission, under the current rate of activities, will be around \$20 million for the next year.

97. The above figures only reflect the operational budget of the Commission, which has greatly benefited from the assistance of supporting Governments through the direct provision of services, staff and equipment. Such Governments may seek reimbursement when adequate funds are obtained from Iraq, which has responsibility for all costs incurred under section C of Security Council resolution 687 (1991).

98. The number of the Special Commission's experts in New York has been increased over the last few months to cope with the growing workload. All additional experts have been provided by Member States at their own cost.

99. The Commission is strengthening its communications system between New York and Baghdad and is acquiring an improved voice and fax data system which will enable the transmission of data in a highly secure manner.

100. The office space situation of the Commission in New York is becoming more difficult. It will be impossible to accommodate, within the currently available space, the additional documents obtained in August which are now arriving in New York. A special request has been made for additional secure space for this purpose.

101. The Commission has described the establishment, preparations and resources of the Baghdad Monitoring and Verification Centre in earlier reports (S/1994/1138 and S/1995/284). All the projects planned to renovate the Canal Hotel facilities for the Centre, in part using Iraqi labour and materials, are now completed. This effort has taken up much of the last year and could not have been finished without the generous contributions of personnel, equipment and materials from supporting States.

102. The field office in Bahrain continues to support the operations of the Commission and the activities of the Baghdad Monitoring and Verification Centre. The Commission wishes to place on record its gratitude to the Government of Bahrain for its great generosity and unstinting support in the establishment and maintenance of the field office in Bahrain. This has constituted one of the most important contributions to the work of the Commission and has considerably expedited that work.

103. Recently, the Secretary-General noted the substantial contributions of air support from the Government of Germany for the operations of the Special Commission and IAEA in Iraq (A/50/1, para. 701). Indeed, without the C-160 transport aircraft and the CH-53G helicopters, the Commission would not have accomplished its work and could not meet the requirements of the Security Council in carrying out ongoing monitoring and verification and its other responsibilities in Iraq.

104. The airlift support provided by Germany has been of the highest quality. One measure of the success of this effort is that the helicopter unit recently achieved 3,000 accident-free flying hours in Iraq under the difficult and complex flight conditions existing there. The C-160 Transall aircraft has flown over 10,000 passengers into and out of Iraq. Another measure is the outstanding logistical support from the contributing Government to its forward-deployed units in Bahrain and in Iraq. Air support will continue to be critical to Commission and IAEA operations in Iraq.

105. Helicopter support in Iraq has been and will continue to be vital for the independence of the operations of the Commission and IAEA. Indeed, with the lifting of sanctions and the resumption of international trade, the requirement for helicopter support will increase significantly. Helicopters will provide efficient transportation for inspection teams to travel to border crossings and

points of entry. At the same time, the current requirements will remain for low-altitude aerial inspection photography; medical evacuation; rapid, no-notice movement of inspection teams; and airlift for vehicles. These many needs are met with the CH-53G, which appears to be the most efficient aircraft currently available for this purpose. The Commission remains profoundly grateful to the Government of Germany for its unique and vital contribution in carrying out the Security Council's mandate in Iraq under section C of Security Council resolution 687 (1991).

IX. CONCLUSION

106. During the period under review and since the Special Commission's report in June 1995, very important developments have taken place in all areas, and a considerable amount of information has become available to the Commission concerning Iraq's proscribed programmes. The Commission's preliminary analysis of this information reveals that Iraq has been concealing proscribed activities and that, consequently, some of the assessments in the Commission's earlier reports have to be revised.

107. Iraq has been misleading the Commission by withholding information that, before the Gulf war, it had secretly produced Scud-type missile engines and carried out research and development on a variety of projects on missiles of prohibited ranges. Furthermore, Iraq's efforts to conceal its biological weapons programme, its chemical missile warhead flight tests and work on the development of a missile for the delivery of a nuclear device led it to provide incorrect information concerning certain of its missile activities. The new revelations cast into doubt the veracity of Iraq's previous declarations in the missile area, including the material balance for proscribed weapons and items. Consequently, Iraq has agreed to provide a new declaration with a full, final and complete disclosure in the missile area.

108. In the chemical weapons area, the Special Commission's investigations have led to disclosure of activities aiming at the acquisition of a considerable capability for the production of the advanced nerve agent VX. Whether Iraq still keeps precursors in storage for immediate VX use has not been fully clarified. The revelations also shed new light on the scope and ambition of Iraq's chemical weapons programme. The Commission must adjust the direction of some of its monitoring activities, especially to prevent Iraq from using its chemical compounds, equipment and activities for secret acquisition of chemical weapons. Further destruction of some Iraqi chemical assets has to be contemplated. The Commission has requested Iraq to provide a new declaration comprising a full, final and complete disclosure of its capabilities with regard to chemical weapons.

109. The Special Commission has detected and identified a hitherto secret offensive biological weapons programme in Iraq comprising a large-scale production of biological warfare agents, the filling and deployment of missile warheads and aerial bombs with agents, as well as biological weapons research and development activities of considerable width and depth. As late as August of this year, Iraq presented to the Commission a formal, but essentially false, declaration on its biological weapons activities. Consequently, the Commission

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has requested again and - Iraq has agreed to provide - a full, final and complete disclosure of its biological weapons programme in the form of a new declaration. Much remains to be verified with regard to these weapons, in particular the destruction of munitions and bulk agents.

110. Given the new disclosures, the Special Commission is obliged to consider, in accordance with paragraph 8 of Security Council resolution 687 (1991), the possible destruction of facilities and items which were used in the production of biological weapons.

111. For the fulfilment of the Special Commission's tasks, it needs a complete understanding of the concept behind each stage of the development of all proscribed weapons. A special concern of the Commission in this respect is the matter of the deployment of Iraq's proscribed missiles with non-conventional warheads for strategic and offensive use.

112. The increased flow of data, whether originating in Iraq's new admissions or in recently obtained documents and other types of documentation, has opened up new possibilities for a solid and credible account of the proscribed weapons and weapons capabilities. With these new developments, the prospects for the full implementation of the weapons chapter of Security Council resolution 687 (1991) have improved.

113. Further exploration and investigation are necessary to verify that Iraq's new statements and the declarations in all the weapons areas requested by the Commission are true representations of the facts. The large amount of documentation obtained will be of use in this regard. The Special Commission will concentrate its personnel and technical resources in order to achieve a complete and reliable account as fast as possible.

114. The system for ongoing monitoring and verification is now in place and has been tested for some time. It is as much in the interests of Iraq as of the Commission that the ongoing monitoring and verification system functions without any flaws. Even if the new revelations have led to adjustments, redirection and augmentation of activities, the system has already proved to be robust and fundamentally sound. Indeed, it was during the build-up of the monitoring structures that the Commission's scientists and analysts were able to detect Iraq's concealment of its hitherto secret biological weapons programme. Likewise, as mentioned above, Iraqi efforts to circumvent the control arrangements in the missile and chemical areas have been detected before any serious damage has occurred. The Commission also detected undeclared efforts by Iraq to establish a covert procurement network for activities under monitoring.

115. In this report, the Commission has outlined its concerns in all areas of its responsibility. Questions can still be raised about the intentions of Iraq as regards possible remnants of its proscribed programmes. In the coming months, the Government of Iraq must present three new declarations comprising full, final and complete disclosures of all its proscribed capabilities. Iraq must at the same time hand over the weapons documentation still in its hands. Access to and control of all relevant documentary evidence is necessary for the Commission to be able quickly and effectively to verify Iraq's declarations and ascertain that all Iraq's proscribed weapons capabilities have indeed been

disposed of. If the requested declarations and actions by Iraq fulfil the requirements of the Security Council, a solid base will be laid for the full implementation of all aspects of section C of Security Council resolution 687 (1991). With an effective and proven monitoring and verification system in place, the Commission should be able to confirm that Iraq would have no capability to project any threat with proscribed weapons against its neighbours.

116. A necessary prerequisite for a comprehensive solution is that Iraq demonstrate a full openness and a manifest willingness to cooperate in all its dealings with the Special Commission. Iraq's stated preparedness to provide such cooperation is a hopeful sign. The true character of Iraq's expressed political intent will soon be tested by the Commission in its inspections and analytical activity. If Iraq were genuinely to translate its statements into action, there would be a real hope for the completion of the task entrusted to the Special Commission within a reasonable time-frame.

APPENDIX

Inspection schedule

(in-country dates)

Nuclear

15	May-21 May 1991	IAEA	1/UNSCOM	1
22	June-3 July 1991	IAEA	2/UNSCOM	4
7	July-18 July 1991	IAEA	3/UNSCOM	5
27	July-10 August 1991	IAEA	4/UNSCOM	6
14	September-20 September 1991	IAEA	5/UNSCOM	14
21	September-30 September 1991	IAEA	6/UNSCOM	16
11	October-22 October 1991	IAEA	7/UNSCOM	19
11	November-18 November 1991	IAEA	8/UNSCOM	22
11	January-14 January 1992	IAEA	9/UNSCOM	25
5	February-13 February 1992	IAEA	10/UNSCOM	27
7	April-15 April 1992	IAEA	11/UNSCOM	33
26	May-4 June 1992	IAEA	12/UNSCOM	37
14	July-21 July 1992	IAEA	13/UNSCOM	41
31	August-7 September 1992	IAEA	14/UNSCOM	43
8	November-19 November 1992	IAEA	15/UNSCOM	46
6	December-14 December 1992	IAEA	16/UNSCOM	47
22	January-27 January 1993	IAEA	17/UNSCOM	49
3	March-11 March 1993	IAEA	18/UNSCOM	52
30	April-7 May 1993	IAEA	19/UNSCOM	56
25	June-30 June 1993	IAEA	20/UNSCOM	55
23	July-25 July 1993	IAEA	21/UNSCOM	61
1	November-9 November 1993	IAEA	22/UNSCOM	64
4	February-11 February 1994	IAEA	23/UNSCOM	65
11	April-22 April 1994	IAEA	24/UNSCOM	73
21	June-1 July 1994	IAEA	25/UNSCOM	53
22	August-2 September 1994	IAEA	26/UNSCOM	90
7	September-29 September 1994	NMG	94-01	
14	October-21 October 1994	IAEA	27/UNSCOM	93
29	September-21 October 1994	NMG	94-02	
21	October-9 November 1994	NMG	94-03	
8	November-29 November 1994	NMG	94-04	
29	November-16 December 1994	NMG	94-05	
16	December 1994-13 January 1995	NMG	94-06	
12	January-2 February 1995	NMG	95-01	
2	February-28 February 1995	NMG	95-02	
28	February-16 March 1995	NMG	95-03	
16	March-6 April 1995	NMG	95-04	
6	April-26 April 1995	NMG	95-05	
27	April-10 May 1995	NMG	95-06	
11	May-30 May 1995	NMG	95-07	
31	May-20 June 1995	NMG	95-08	
21	June-9 July 1995	NMG	95-09	
10	July-30 July 1995	NMG	95-10	
31	July-10 August 1995	NMG	95-11	
11	August-29 August 1995	NMG	95-12	

30	August-11 September 1995	NMG	95-13	
9	September-19 September 1995	IAEA	28/UNSCOM	131
12	September-3 October 1995	NMG	95-14	
4	October 1995-	NMG	95-15	

Chemical

9	June-15 June 1991	CW	1/UNSCOM	2
15	August-22 August 1991	CW	2/UNSCOM	9
31	August-8 September 1991	CW	3/UNSCOM	11
31	August-5 September 1991	CW	4/UNSCOM	12
6	October-9 November 1991	CW	5/UNSCOM	17
22	October-2 November 1991	CW	6/UNSCOM	20
18	November-1 December 1991	CBW	1/UNSCOM	21
27	January-5 February 1992	CW	7/UNSCOM	26
21	February-24 March 1992	CD	1/UNSCOM	29
5	April-13 April 1992	CD	2/UNSCOM	32
15	April-29 April 1992	CW	8/UNSCOM	35
18	June 1992-14 June 1994	CDG /	UNSCOM	38
26	June-10 July 1992	CBW	2/UNSCOM	39
21	September-29 September 1992	CW	9/UNSCOM	44
6	December-14 December 1992	CBW	3/UNSCOM	47
6	April-18 April 1993	CW	10/UNSCOM	55
27	June-30 June 1993	CW	11/UNSCOM	59
19	November-22 November 1993	CW	12/UNSCOM	65
1	February-14 February 1994	CW	13/UNSCOM	67
20	March-26 March 1994	CW	14/UNSCOM	70
18	April-22 April 1994	CW	15/UNSCOM	74
25	May-5 June 1994	CW	16/UNSCOM	75
31	May-12 June 1994	CW	17/UNSCOM	76
8	June-14 June 1994	CW	18/UNSCOM	77
10	August-23 August 1994	CW	19/UNSCOM	89
13	September-24 September 1994	CW	20/UNSCOM	91
2	October 1994-14 January 1995	CG	1	
23	October-27 October 1994	CW	21/UNSCOM	95
11	January-21 January 1995	CW	23/UNSCOM	108
16	January-22 January 1995	CW	22/UNSCOM	107
14	January-15 April 1995	CG	2	
16	April-26 September 1995	CG	3	
16	September-20 September 1995	CW	25/UNSCOM	124
27	September 1995-	CG	4	

Biological

2	August-8 August 1991	BW	1/UNSCOM	7
20	September-3 October 1991	BW	2/UNSCOM	15
11	March-18 March 1993	BW	3/UNSCOM	53
8	April-26 April 1994	BW	4/UNSCOM	72
28	May-7 June 1994	BW	5/UNSCOM	78
24	June-5 July 1994	BW	6/UNSCOM	84
5	June-8 June 1994	BW	7/UNSCOM	86
25	July-7 September 1994	BW	8/UNSCOM	87

20	August-25 August 1994	BW 9/UNSCOM	88
29	August-3 September 1994	BW 10/UNSCOM	92
29	September-14 October 1994	BW 11/UNSCOM	94
23	September-26 September 1994	BW 12/UNSCOM	96
15	November-22 November 1994	BW 15/UNSCOM	104
2	December-10 December 1994	BW 16/UNSCOM	105 (IMT)
2	December-13 December 1994	BW 13/UNSCOM	99 (IMT)
9	December-16 December 1994	BW 17/UNSCOM	106 (IMT)
28	December 1994-31 January 1995	IBG 1	
10	January-22 January 1995	BW 18/UNSCOM	109
20	January-6 February 1995	BW 19/UNSCOM	110
23	January-3 February 1995	BW 22/UNSCOM	113
3	February-17 February 1995	BW 20/UNSCOM	111
3	February-17 February 1995	BW 21/UNSCOM	112
12	March-18 March 1995	BW 23/UNSCOM	115
24	March-6 April 1995	BW 24/UNSCOM	116
1	February-3 April 1995	IBG 2	
4	April-7 August 1995	BG 1	
27	April-16 May 1995	BW 25/UNSCOM	118
15	July-26 July 1995	BW 26/UNSCOM	121
19	August-3 September 1995	BW 27/UNSCOM	125
27	September-11 October 1995	BW 28/UNSCOM	126
8	August 1995-	BG2	

Ballistic missiles

30	June-7 July 1991	BM 1/UNSCOM	3
18	July-20 July 1991	BM 2/UNSCOM	10
8	August-15 August 1991	BM 3/UNSCOM	8
6	September-13 September 1991	BM 4/UNSCOM	13
1	October-9 October 1991	BM 5/UNSCOM	18
1	December-9 December 1991	BM 6/UNSCOM	23
9	December-17 December 1991	BM 7/UNSCOM	24
21	February-29 February 1992	BM 8/UNSCOM	28
21	March-29 March 1992	BM 9/UNSCOM	31
13	April-21 April 1992	BM 10/UNSCOM	34
14	May-22 May 1992	BM 11/UNSCOM	36
11	July-29 July 1992	BM 12/UNSCOM	40A+B
7	August-18 August 1992	BM 13/UNSCOM	42
16	October-30 October 1992	BM 14/UNSCOM	45
25	January-23 March 1993	IMT1a/UNSCOM	48
12	February-21 February 1993	BM 15/UNSCOM	50
22	February-23 February 1993	BM 16/UNSCOM	51
27	March-17 May 1993	IMT1b/UNSCOM	54
5	June-28 June 1993	IMT1c/UNSCOM	57
10	July-11 July 1993	BM 17/UNSCOM	60
24	August-15 September 1993	BM 18/UNSCOM	62
28	September-1 November 1993	BM 19/UNSCOM	63
21	January-29 January 1994	BM 20/UNSCOM	66
17	February-25 February 1994	BM 21/UNSCOM	69
30	March-20 May 1994	BM 22/UNSCOM	71
20	May-8 June 1994	BM 23/UNSCOM	79

10	June-24 June 1994	BM 24/UNSCOM	80
14	June-22 June 1994	BM 25/UNSCOM	81
3	July-28 July 1994	BM 26/UNSCOM	82
15	July-24 July 1994	BM 27/UNSCOM	85
17	August-9 October 1994	MG 1	
2	October-6 October 1994	BM 28/UNSCOM	98A
23	October-28 October 1994	BM 28/UNSCOM	98B
14	October 1994-21 February 1995	MG 2	
19	October-22 October 1994	MG 2A	
2	December-6 December 1994	MG 2B	
9	December-14 December 1994	BM 29/UNSCOM	101
9	December-16 December 1994	BM 30/UNSCOM	102
27	January-31 January 1995	MG 2C	
22	February-30 May 1995	MG 3	
6	March-14 March 1995	BM 31/UNSCOM	103
25	May-1 June 1995	BM 32/UNSCOM	100
30	May-27 August 1995	MG 4	
25	July-30 July 1995	BM 33/UNSCOM	122
20	August-24 August 1995	MG 4A	
27	August 1995-	MG 5	
27	September-1 October 1995	BM 34/UNSCOM	123

Computer search

12 February 1992

UNSCOM 30

Export/import mission

22 April - 6 May 1995

UNSCOM 119

Special missions

30 June-3 July 1991
 11 August-14 August 1991
 4 October-6 October 1991
 11 November-15 November 1991
 27 January-30 January 1992
 21 February-24 February 1992
 17 July-19 July 1992
 28 July-29 July 1992
 6 September-12 September 1992
 4 November-9 November 1992
 4 November-8 November 1992
 12 March-18 March 1993
 14 March-20 March 1993
 19 April-24 April 1993
 4 June-5 July 1993
 15 July-19 July 1993
 25 July-5 August 1993

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9 August-12 August 1993
10 September-24 September 1993
27 September-1 October 1993
1 October-8 October 1993
5 October-15 February 1993
2 December-10 December 1993
2 December-16 December 1993
21 January-27 January 1994
2 February -6 February 1994
10 April-14 April 1994
24 April-26 April 1994
28 May-29 May 1994
4 July-6 July 1994
8 August-16 August 1994
15 September-19 September 1994
21 September-25 September 1994
23 September-26 September 1994
3 October-6 October 1994
4 November-20 November 1994
7 November-12 November 1994
14 November-17 November 1994
4 December-18 December 1994
14 December-20 December 1994
7 January-31 January 1995
7 January-21 January 1995
13 January-26 January 1995
13 January-16 March 1995
12 January-28 January 1995
23 January-14 February 1995
25 January-4 February 1995
19 February-23 February 1995
22 February-28 February 1995
28 February-18 March 1995
16 March-29 March 1995
24 March-27 March 1995
4 May-23 May 1995
14 May-17 May 1995
29 May-1 June 1995
19 June-22 June 1995
22 June-2 July 1995
30 June-2 July 1995
2 July-10 July 1995
4 August-6 August 1995
7 August-12 August 1995
17 August-20 August 1995
24 August-2 September 1995
24 August-18 September 1995
5 September-14 September 1995
17 September-20 September 1995
29 September-1 October 1995
